

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
WACO DIVISION

THE TRUSTEES OF PURDUE) Docket No. WA 21-CA-727 ADA
UNIVERSITY)
)
vs.) Waco, Texas
)
STMICROELECTRONICS N.V.,)
STMICROELECTRONICS, INC.,)
STMICROELECTRONICS)
INTERNATIONAL N.V.) April 29, 2022

TRANSCRIPT OF MARKMAN HEARING VIA VIDEOCONFERENCE
BEFORE THE HONORABLE DEREK T. GILLILAND

APPEARANCES:

For the Plaintiff: Mr. Raphael D.P. Chabaneix
Mr. Alfonso Garcia Chan
Ms. Halima Shukri Ndai
Mr. Chijioke E. Offor
Mr. Michael W. Shore
Shore Chan DePumpo, LLP
901 Main Street, Suite 3300
Dallas, Texas 75202

Mr. Craig D. Cherry
Steckler, Wayne, Cherry
& Love, PLLC
8416 Old McGregor Road
Waco, Texas 76712

For the Defendant: Mr. Justin S. Cohen
Ms. Nadia E. Haghighatian
Mr. Bruce S. Sostek
Holland & Knight, LLP
1722 Routh Street, Suite 1500
Dallas, Texas 75201

1 **(Appearances Continued:)**

2 For the Defendant: Mr. Massimo Ciccarelli
3 Ciccarelli Law Firm
4 100 North 6th Street, Suite 502
5 Waco, Texas 76701

6 Court Reporter: Ms. Lily Iva Reznik, CRR, RMR
7 501 West 5th Street, Suite 4153
8 Austin, Texas 78701
9 (512)391-8792

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25 Proceedings reported by computerized stenography,
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09:00:34 1 THE COURT: Good morning, everybody. Please be
09:00:37 2 seated.

09:00:44 3 We're here for a Markman hearing and I'm excited
09:00:47 4 to see all of -- everybody in person as well as all the
09:00:50 5 people by Zoom. So we'll start by having Ms. Copp call
09:00:54 6 the case.

09:00:54 7 THE CLERK: Yes, your Honor.

09:00:55 8 Calling Case No. WA-21-CV-727, styled, The
09:01:01 9 Trustees of Purdue University vs. STMicroelectronics N.V.,
09:01:06 10 et al. Called for a Markman hearing.

09:01:07 11 THE COURT: All right. And if I could get
09:01:09 12 announcements from the parties. I'll start with Mr.
09:01:11 13 Cherry, who I see standing up already.

09:01:16 14 MR. CHERRY: Good morning, your Honor.

09:01:17 15 It is a privilege to be in your courtroom in
09:01:19 16 person for the first time with you since taking the bench.
09:01:22 17 I know I can speak on behalf of our local bar saying
09:01:26 18 congratulations again on your appointment and welcome
09:01:27 19 home.

09:01:28 20 THE COURT: Thank you. Thank you. It's great to
09:01:30 21 be here and great to see everybody here.

09:01:33 22 MR. CHERRY: Absolutely.

09:01:33 23 Today, your Honor, on behalf of Purdue
09:01:36 24 University, I want to introduce in person today is Michael
09:01:39 25 Shore.

09:01:39 1 THE COURT: Good morning, Mr. Shore.

09:01:41 2 MR. CHERRY: Alfonso Chan, Mr. Chan, Raphael
09:01:45 3 Chabaneix.

09:01:46 4 THE COURT: Mr. Chabaneix.

09:01:47 5 MR. CHERRY: And Chiji Offor.

09:01:49 6 THE COURT: Mr. Offor. It's good to see all of
09:01:52 7 you.

09:01:52 8 MR. CHERRY: Mr. Offor and Mr. Shore will be
09:01:53 9 handling the arguments today on behalf of Purdue. We also
09:01:57 10 have some attorneys from Shore Chan attending via Zoom,
09:02:01 11 I'd like to introduce them. Will Ellerman.

09:02:04 12 THE COURT: Mr. Ellerman, I've heard of him.

09:02:06 13 MR. CHERRY: Chris Hsu, Halima Ndai and Ari
09:02:11 14 Rafilson. And then, we also have several representatives
09:02:13 15 from Purdue University who are attending, also via Zoom,
09:02:20 16 I'd like to introduce them: Mr. James Cooper, who's
09:02:23 17 professor emeritus at Purdue. Ken Waite, chief patent
09:02:26 18 counsel at Purdue, Andrew Umlauf, the assistant director
09:02:29 19 of IP at Purdue, D.H.R. Sarma, the director of patent
09:02:35 20 process at Purdue, Matt Halladay, business development
09:02:40 21 manager at Purdue, Liang Yan, patent counsel at Purdue,
09:02:45 22 and Manjiri Gagare, patent agent Purdue. And with that,
09:02:49 23 your Honor, that concludes our announcements.

09:02:51 24 THE COURT: Very good. Well, welcome to all the
09:02:52 25 counsel and especially welcome to all the client

09:02:54 1 representatives and the people at Purdue that are
09:02:58 2 attending by Zoom.

09:02:58 3 Could I have announcements from the defendant,
09:03:02 4 please.

09:03:05 5 MR. SOSTEK: Good morning, your Honor.

09:03:06 6 THE COURT: Good morning, Mr. Sostek. How are
09:03:07 7 you doing?

09:03:08 8 MR. SOSTEK: I am well. Bruce Sostek on behalf
09:03:10 9 Holland & Knight on behalf of STMicroelectronics. Glad to
09:03:14 10 be here, also.

09:03:14 11 THE COURT: Good. Great to see you.

09:03:16 12 MR. COHEN: Good morning, your Honor.

09:03:18 13 Justin Cohen of Holland & Knight, also on behalf
09:03:19 14 STMicroelectronics, Inc., and it's a pleasure to see you
09:03:22 15 up on the bench.

09:03:23 16 THE COURT: Thank you. It's good to see you,
09:03:25 17 again, as well, Mr. Cohen.

09:03:29 18 MR. CICCARELLI: Your Honor, Max Ciccarelli for
09:03:31 19 STMicroelectronics. Also on Zoom, we have a few
09:03:33 20 individuals. We have Nadia Haghighatian, who is a partner
09:03:35 21 with the firm of Holland & Knight. We also have two
09:03:38 22 client representatives, Andrew Mayo and Christopher
09:03:42 23 Ratway. They are both inhouse counsel with ST.

09:03:45 24 THE COURT: Excellent. Well, welcome to all of
09:03:47 25 you in person and, also, the attendees by Zoom and

09:03:51 1 especially those with ST. So I'm glad that everybody's
09:03:56 2 able to observe and watch. We're here for -- I know we've
09:03:59 3 got a Markman and as well as a motion to strike the expert
09:04:04 4 report, I believe it was, or a Daubert-type motion.

09:04:13 5 Go ahead, Mr. Shore.

09:04:17 6 MR. SHORE: For the court reporter, this is
09:04:18 7 Michael Shore.

09:04:19 8 We're not asking the Court in a non-jury
09:04:21 9 proceeding to strike the expert. We're simply making the
09:04:23 10 objection so that when the report is considered, it's
09:04:27 11 considered in light of the objection.

09:04:28 12 THE COURT: Okay. Okay. Understood.

09:04:31 13 Mr. Ciccarelli.

09:04:35 14 MR. CICCARELLI: Thank you, your Honor. This is
09:04:37 15 Max Ciccarelli.

09:04:38 16 In terms of their expert, we'll address that when
09:04:41 17 the time comes. So in terms of our expert -- in terms of
09:04:43 18 their expert, their expert submitted a declaration with
09:04:46 19 the sur-reply, which usually we don't submit new evidence
09:04:50 20 with the last round of briefing. At least that's my
09:04:52 21 practice. I think it's the practice of many courts around
09:04:54 22 the country, and they did. And we've not had an
09:04:57 23 opportunity to respond to that declaration. So ST
09:05:02 24 believes that, likewise, that should be struck or at least
09:05:04 25 not considered for that reason just because it's -- we

09:05:06 1 have not had a chance to respond to it.

09:05:08 2 THE COURT: Understood. Thank you.

09:05:12 3 Well, why don't we then begin with the Markman
09:05:14 4 procedures. And I think, let me find my notes, but I know
09:05:20 5 I saw Mr. Offor. Are you going to be handling most of the
09:05:23 6 arguments and would you like to start? I think -- well,
09:05:27 7 it may be ST that wants to start with argument since we're
09:05:32 8 -- I've got "second thicker oxide layer" is the first
09:05:34 9 term.

09:05:37 10 MR. CICCARELLI: I apologize. I thought we were
09:05:38 11 starting with that term and since ST was on the losing end
09:05:39 12 of the preliminaries, I thought you'd want to hear from us
09:05:41 13 first. But if that's not the case, we can do it
09:05:43 14 differently.

09:05:43 15 THE COURT: No, no. That's exactly the case. As
09:05:45 16 I was pulling out my cheat sheet, I remembered that I
09:05:49 17 think Purdue only wanted to address the one preamble term.

09:05:53 18 MR. SHORE: We have one quick housecleaning --
09:05:58 19 housekeeping matter, if you don't mind, your Honor.

09:06:00 20 THE COURT: Sure. Go ahead, Mr. Shore.

09:06:03 21 MR. SHORE: When the Court produced its
09:06:06 22 preliminary constructions and it said that the preamble
09:06:09 23 was limiting, obviously neither party briefed anything
09:06:13 24 about what the limitations of the preamble would be or
09:06:16 25 what the definitions of any of the -- well, the single

09:06:19 1 word or the single thing in the preamble. And this
09:06:23 2 obviously to us was a little bit vexing or confusing
09:06:26 3 because we did not believe that whether or not the ST
09:06:30 4 parts were MOSFETs was at all an issue in the case. And
09:06:35 5 the reason why obviously is that ST calls their accused
09:06:41 6 products MOSFETs or SiC MOSFETs on their website. They
09:06:45 7 call the accused products MOSFETs on the data sheets for
09:06:48 8 products that they give to costumers. They have white
09:06:51 9 papers where they refer to these parts as MOSFETs. They
09:06:53 10 have an on-demand webinar on their website called SiC
09:06:59 11 MOSFETs for power conversion that talks about the accused
09:06:59 12 products.

09:07:03 13 So today, I asked opposing counsel: Are you
09:07:05 14 contesting whether or not your parts are MOSFETs? Because
09:07:07 15 if you're not contesting it, we don't need to construe the
09:07:11 16 preamble because we can just tell the jury it's conceded
09:07:14 17 that these parts are MOSFETs. There's nothing to do.
09:07:18 18 They refused to do so. They refused to concede that their
09:07:22 19 parts are MOSFETs. So we believe, incredibly, that one of
09:07:27 20 the things we're going to need the Court to do is to
09:07:29 21 construe the term "MOSFET," and we're going to be prepared
09:07:32 22 to argue that term today, what MOSFET should mean.

09:07:38 23 So that is something that I wanted to alert the
09:07:40 24 Court to before we did it. And again, we are pretty
09:07:43 25 shocked that they would deny their parts are MOSFETs when

09:07:46 1 we count, so far, about 167 admissions that they are
09:07:49 2 MOSFETs on their own website, and data sheets, and white
09:07:52 3 papers.

09:07:53 4 But we think that -- we know what a MOSFET is,
09:07:57 5 they know what a MOSFET is, everyone, I think, almost in
09:08:00 6 this room knows what a MOSFET is, but the jury won't. And
09:08:03 7 claims construction is for the jury, it's not for us.

09:08:06 8 THE COURT: Okay. Let me -- I'm going to stop
09:08:08 9 you there, and one, I'll say, you know, today's not about
09:08:12 10 infringement. It's just about claim construction. But
09:08:15 11 that sounds like it goes straight to the preamble
09:08:18 12 argument, so we'll address it when we get to the preamble
09:08:20 13 argument.

09:08:21 14 MR. SHORE: Thank you, your Honor.

09:08:22 15 THE COURT: All right. With that, we'll go back
09:08:23 16 to Mr. Ciccarelli.

09:08:25 17 MR. CICCARELLI: Thank you, your Honor.

09:08:33 18 We're starting with the 112 patent that has two
09:08:36 19 terms. The terms are "a second thicker oxide layer"
09:08:41 20 that's used in claim 1, and the other one is "a gate oxide
09:08:45 21 layer" that's used in claim 6. Although they use
09:08:47 22 defendant words, the parties agree that those terms are
09:08:50 23 referring to the physical structure that is the insulator
09:08:53 24 that is around the gate, and that would insulate the gate
09:08:56 25 from the metal that is later deposited on top of that

09:08:59 1 oxide.

09:09:00 2 So we know what we're talking about, although the
09:09:02 3 two different claims use slightly different terms, so
09:09:05 4 we're going to discuss those together.

09:09:07 5 THE COURT: Okay.

09:09:09 6 MR. CICCARELLI: This is the Court's preliminary
09:09:10 7 construction. Melissa, is there any way that you could
09:09:17 8 minimize that window so that we can see it? I don't know
09:09:20 9 if that's possible or not. There you go. Thank you.
09:09:25 10 Perfect. Appreciate it.

09:09:27 11 So the Court went with a plain and ordinary
09:09:31 12 meaning. And I wanted to point out that there was some
09:09:33 13 discussion in the briefing and some suggestion that maybe
09:09:37 14 ST was trying to limit the term to just a grown oxide.
09:09:41 15 That's not what our construction proposes and I've
09:09:43 16 highlighted it here on the screen. Our construction talks
09:09:46 17 about a layer that is formed, created, or grown by
09:09:50 18 reacting the gate. So grown is one of those
09:09:53 19 possibilities, but there's other possibilities.

09:09:55 20 And the way we pick those words is, we looked to
09:09:58 21 the patent and what the patent said was the limit of the
09:10:03 22 invention. So I want to go through that process to kind
09:10:05 23 of show the Court how we came up with these words and why
09:10:08 24 they're important.

09:10:09 25 THE COURT: Okay.

09:10:10 1 MR. CICCARELLI: So the patent begins by talking
09:10:12 2 about what the invention is, and we're lucky that it
09:10:14 3 doesn't just say it once, it says it many times. So it
09:10:18 4 starts out in the title. In the title, it says silicon
09:10:22 5 carbide power MOSFET with self-aligned source contact. So
09:10:26 6 we start seeing the self-aligned feature is a critical
09:10:28 7 feature. In the background, it says this invention
09:10:32 8 relates generally to semiconductor field effect
09:10:36 9 transistors and more particular to field effect
09:10:40 10 transistors having self-aligned source contacts. So
09:10:42 11 again, we're talking about self-aligned source contacts.
09:10:44 12 In the summary of the invention, same thing. The present
09:10:46 13 invention provides high voltage -- not just an embodiment,
09:10:50 14 right? The present invention provides power voltage
09:10:54 15 MOSFETs with self-aligned source contacts.

09:10:57 16 Then again, on column 3, lines 55 through 59,
09:11:02 17 talks about both these problems from mask alignment and
09:11:06 18 the increased cell width are eliminated in the present
09:11:10 19 invention by negating the opportunity for misalignment.
09:11:12 20 So this whole alignment thing is a very important thing to
09:11:15 21 this patent that the patent is trying to solve.

09:11:19 22 And it then talks about this alignment issue and
09:11:21 23 the fact that it's related to the masks, and it says the
09:11:24 24 area of the functional source contact is not determined by
09:11:27 25 the alignment of any mask levels, instead, it is totally

09:11:31 1 determined by the spacing between the adjacent polysilicon
09:11:36 2 gates and is, in fact, self-aligned to the gate level. So
09:11:39 3 the patent starts out by saying we're trying to solve this
09:11:42 4 alignment problem, how do we solve it.

09:11:46 5 And the specification goes forward and it
09:11:50 6 describes this problem and it describes the solution. The
09:11:53 7 specific solution it describes is all about growing the
09:11:57 8 oxide. And again, remember our construction is not
09:12:00 9 limited to just growing, which is that preferred
09:12:03 10 embodiment, our construct is broader. So the patent after
09:12:06 11 describing the embodiment says, okay, alternative
09:12:09 12 embodiments are contemplated. How broad can we go from
09:12:14 13 this embodiment? The patent tells us. It says
09:12:17 14 alternative embodiments are contemplated so long as, and
09:12:20 15 it says two things after that. The first is that the gate
09:12:23 16 and the substrate react to form, create or grow in an
09:12:31 17 insulation layer, and that's where we got the language for
09:12:33 18 our construction. The patent here is saying you can have
09:12:35 19 other embodiments so long as the gate and source react to
09:12:42 20 form, create or grow. Then this goes a little bit further
09:12:44 21 and it explains why and it says what it means. It says
09:12:49 22 you need to grow them sufficiently faster at the gate
09:12:52 23 surface than at the substrate surface. Let me see if I
09:12:57 24 can pull up the pointer.

09:12:59 25 So it's saying growing faster at the gate surface

1 than at the source surface. And that's why the source
2 here is shown thinner and the gate is shown thicker. And
3 it says that it's doing that because it will, therefore,
4 be uniformly removable at a rate which will remove all
5 such form, created or grown layer completely from the
6 substrate surface and leave a sufficiently insulated layer
7 around the gate.

8 So here, in this section -- and I'm going to
9 break this down a little bit and talk more about it, but
10 what we have is a paragraph that at the end of the patent
11 says we have shown an embodiment, you can do it different
12 ways so long as you meet this criteria. So the patent is
13 clearly explaining what it considers to be the breadth of
14 the invention. And that's why we're asking the Court to
15 limit the claims to that breadth of invention that the
16 patentee establishes.

17 So what I wanted to do now is step back a little
18 bit and talk about the technology and why that matters,
19 why this reaction language matters. So the problem that
20 the patent is dealing with is that when you have a
21 deposited oxide -- and I want to show what a deposited
22 oxide is -- to create a deposited oxide, you start out
23 with a silicon -- a gas that has silicon and a gas that
24 has oxygen. These two gases come together and they form
25 silicon dioxide, which is an oxide, molecules. These

09:14:33 1 molecules that fall down towards the substrate and we have
09:14:37 2 an animation to show that. And what's different here is
09:14:39 3 that the silicon for the reaction for the oxide is not
09:14:42 4 coming from the gate, it's coming from the gas. So I'm
09:14:44 5 going to play that animation and you'll see the silicon
09:14:49 6 and oxygen coming together to form the silicon dioxide,
09:14:53 7 which then gets deposited in a uniform layer across the
09:14:56 8 underlying structures.

09:14:58 9 So that's -- when you do that, when you have a
09:15:01 10 layer that is of uniform thickness, how do you cut an
09:15:06 11 opening? We now have to cut an opening through that oxide
09:15:09 12 to make the connection to the source. How do we do that?
09:15:12 13 When you have a uniform thickness, you have to use a mask.
09:15:16 14 So what you do is, you put a layer of photo resist. It's
09:15:20 15 just a material that is sensitive to light. You then use
09:15:23 16 a mask, and a mask, your Honor probably knows, is just a
09:15:25 17 piece of glass with a pattern on it so when you shine a
09:15:28 18 light, that pattern is then transferred over to the wafer.

09:15:32 19 So you use a mask and when you apply the light,
09:15:35 20 the light will interact with the photo resist where it
09:15:38 21 hits, and it weakens the photo resist so you can then
09:15:42 22 remove it. So we're showing that in the animation, the
09:15:44 23 light touching the photo resist weakens it so that it can
09:15:47 24 be removed.

09:15:48 25 Now, you use an etch and the etch is

09:15:52 1 preferential. It doesn't etch away the photo resist, it
09:15:55 2 only etches away the oxide. And so, we've animated that
09:15:58 3 to show that through this etch process, the oxide is
09:16:03 4 etched away to cut that opening into the oxide. Once
09:16:07 5 you've done that, you can remove that photo resist and you
09:16:11 6 can put down your metal, which provides the connection
09:16:13 7 from the source to the outside world. But again, we have
09:16:17 8 to use a mask for this process.

09:16:18 9 Now, what's this mask alignment problem that we
09:16:21 10 were talking about? If you align the mask perfectly,
09:16:25 11 everything's good. The problem is that as we show here,
09:16:29 12 as the mask is misaligned, it could create a problem.
09:16:32 13 Like here, for example, the insulation is now getting thin
09:16:35 14 around the gate; or if it gets misaligned even more, you
09:16:40 15 could totally remove the insulation and now you have a
09:16:42 16 short circuit. Not good in an electrical product. So
09:16:45 17 alignment is this problem that comes in because you may
09:16:48 18 not be able to align the mask perfectly, and that's the
09:16:50 19 problem that the 112 patent was trying to solve.

09:16:53 20 So how does it solve that problem? One second.
09:16:57 21 Okay. It does it because it's using a silicon carbide
09:17:01 22 substrate, it uses a grown oxide and I want to describe
09:17:04 23 that next. So when you grow an oxide, you put it in a
09:17:10 24 environment that has oxygen, a lot of oxygen and it's at
09:17:15 25 high temperature. What happens there is, the silicon in

09:17:17 1 the gates will react with the oxygen and create silicon
09:17:21 2 dioxide -- or your oxide just around the gates. And
09:17:24 3 there, it does it very fast because the gates are made of
09:17:28 4 polysilicon, which give up its silicon very easily, so it
09:17:32 5 reacts easily and it oxidizes fast. So you get a thick
09:17:35 6 layer there whereas around the source, because it's made
09:17:38 7 of silicon carbide, silicon carbide doesn't give up its
09:17:44 8 silicon atoms as easily as polysilicon, so it reacts
09:17:48 9 slower and so, the thickness is less. And so, we've
09:17:50 10 animated that to kind of show that, and what you notice is
09:17:52 11 the gate is getting smaller because it's reacting with the
09:17:56 12 oxygen. So this is the "reacting with" language that we
09:17:58 13 saw earlier in our construction.

09:18:00 14 Now, once you have done that, again, you have
09:18:02 15 thicker oxide around the gates, thinner oxide over the
09:18:07 16 source. What do you do now? Now you don't need a mask.
09:18:10 17 You can do an etch over the entire wafer and etch it back
09:18:13 18 just enough to eliminate that thickness that's over the
09:18:16 19 source. And so, we show that right now and you can see
09:18:19 20 that's etching away, it's also etching away the oxide on
09:18:22 21 top of the gate.

09:18:23 22 That's okay because it's thicker so you remove a
09:18:26 23 little bit. Let's say you remove ten percent, you still
09:18:28 24 have a lot of oxide to protect the gate. And so, what you
09:18:32 25 now have is an opening that is self-aligned to the gates.

09:18:36 1 It's self-aligned because you didn't have to use a mask
09:18:38 2 that you have to align it. It aligns itself because the
09:18:41 3 oxide grows around the gate, so it grows exactly where you
09:18:44 4 need it. And then, when you put in the metal to make the
09:18:47 5 connection from the source to the outside world,
09:18:49 6 everything's aligned without using a mask.

09:18:52 7 That's what the embodiment shows. The embodiment
09:18:55 8 in the patent says you grow the oxide. And in case
09:18:59 9 there's any question that I'm making all this stuff --
09:19:01 10 well, actually, this is a summary real quick. I can skip
09:19:04 11 through the summary. I think the Court gets it. The
09:19:07 12 patent describes all the stuff that I went through, okay?
09:19:10 13 It just doesn't do it with fancy animations and that's
09:19:13 14 fine, but it talks about misalignment of the source
09:19:17 15 contact mask. It talks about oxidation layer is grown, so
09:19:21 16 it does talk about growing. It talks about that the --
09:19:25 17 that growing step grows oxidation on the polysilicon gates
09:19:29 18 about ten times faster or more than the silicon carbide
09:19:33 19 substrate without using a photo mask.

09:19:36 20 Then even during the prosecution history, your
09:19:39 21 Honor, there was another claim, claim 4 that is now claim
09:19:43 22 2 and that's similar to claim 6, where, again, it has an
09:19:47 23 oxide layer around the gate. And on the next slide, I'm
09:19:49 24 going to show what the applicant argued during
09:19:54 25 prosecution. It said applicant's invention provides for a

09:19:58 1 silicon substrate and polysilicon gates because growth of
09:20:03 2 the oxidation layer on the polysilicon gates occurs
09:20:06 3 considerably faster than on the silicon carbide substrate
09:20:10 4 which creates a much thicker combined oxide layer between
09:20:14 5 adjacent gates. Thus after a short oxide etch is applied
09:20:18 6 long enough to completely remove the thin combined oxide
09:20:21 7 layer over the substrate surface, there is still left a
09:20:23 8 very thick insulating oxide layer on the tops and sides of
09:20:26 9 the gates.

09:20:26 10 So again, this is what we just discussed earlier,
09:20:29 11 they repeated it during prosecution.

09:20:32 12 THE COURT: Let me ask you just real quick,
09:20:34 13 sorry, Mr. Ciccarelli. On this one, just for my notes, is
09:20:37 14 this response one of the exhibits to the Markman briefing?
09:20:43 15 I just wanted to get a docket number.

09:20:46 16 MR. CICCARELLI: I can't remember. But we can
09:20:48 17 provide the Court the copy. And it's also on our -- yes.
09:20:50 18 We can provide the Court a copy for sure. And I just
09:20:52 19 can't remember, so I apologize.

09:20:53 20 THE COURT: Yeah. If it's in there, I'm sure I
09:20:56 21 saw it. I just can't remember reading it. Okay. Go
09:20:58 22 ahead.

09:20:58 23 MR. CICCARELLI: You already read it and studied
09:21:00 24 it, your Honor, I know.

09:21:01 25 Okay. So basically without using a photo mask,

09:21:04 1 the specification talks about all those things and why
09:21:07 2 this solution of different thicknesses is such a great
09:21:10 3 solution in the expert's sort of opinion, let's say. So
09:21:16 4 again, we are not -- our construction doesn't say just
09:21:19 5 grown. It uses the words that the patent used in this "so
09:21:23 6 long as" paragraph that we discussed earlier because,
09:21:26 7 again, I think it's pretty clear that this paragraph says
09:21:29 8 you can go broader than the embodiments, but then, it puts
09:21:32 9 a limit and the limit are those two things. So long as
09:21:36 10 the gate and source react to form, create or grow an
09:21:39 11 insulation layer of different thicknesses so that you
09:21:42 12 don't need a mask.

09:21:43 13 That's the heart of how far this invention can
09:21:45 14 go, and we're just trying to be clear that that's what
09:21:49 15 we're limiting it to. That's our understanding of the
09:21:52 16 plain and ordinary meaning of this word as it's used in
09:21:54 17 this patent and this claim. But I think there's some
09:21:56 18 disagreement. And I think it's ripe for the Court to
09:21:59 19 decide whether, in fact, the invention can go broader than
09:22:02 20 what the patent says the invention is.

09:22:06 21 THE COURT: Okay. And to make sure I follow you,
09:22:11 22 then, it's ST's position that its proposed definition,
09:22:18 23 which I'm trying to scroll back to here, does not -- the
09:22:24 24 formed, created or grown by reacting the gate would not
09:22:28 25 exclude forming it by deposition?

09:22:32 1 MR. CICCARELLI: Well, again, I don't -- it
09:22:33 2 depends on what deposition process you're talking about,
09:22:35 3 right? If it's a cold deposition process that creates a
09:22:39 4 layer of the same thickness, then no, it can't cover that
09:22:43 5 because that requires a mask, right? If there is some
09:22:46 6 fancy process -- and Dr. Bhat included in his -- I think
09:22:52 7 it was his supplemental declaration that we haven't had a
09:22:54 8 chance to respond to, he pulls one out of the air and says
09:22:57 9 you've got the selective deposition process that gives you
09:23:01 10 different thicknesses, provides no support. So we can't
09:23:03 11 even test to see where he's pulling it from or when it was
09:23:06 12 developed, or created, or invented. Maybe it's something
09:23:08 13 that's very recent.

09:23:09 14 Our point is, it doesn't matter. First of all,
09:23:11 15 it's not in the patent, it's not used in the accused
09:23:14 16 product, so it makes no difference. It's a red herring
09:23:17 17 that he throws in there to try to say there could be some
09:23:19 18 other process. As long as the process reacts -- as long
09:23:22 19 as the gate reacts with the gate to form, create or grow
09:23:27 20 the layer to where you don't need a mask, then there may
09:23:31 21 be other processes, and the experts will opine on those if
09:23:35 22 it's necessary. We don't need to resolve that now.

09:23:37 23 THE COURT: Okay. And is there anything in ST's
09:23:40 24 proposed definition that excludes the use of a mask, or
09:23:45 25 does that come from other claim elements?

09:23:48 1 MR. CICCARELLI: So we thought that this language
09:23:49 2 is sufficient, the language that we proposed, because we
09:23:51 3 think that gets to the heart of it technologically. I
09:23:55 4 think implicit in that is, when you read the patent, the
09:23:57 5 whole point is to remove the mask to solve the alignment
09:24:00 6 problem. You could add that in very easily. I think that
09:24:05 7 would help to make it clear. We think it's clear and
09:24:07 8 trying to keep constructions to fewer words. That's why
09:24:10 9 we went with fewer. I think it would be better if we did
09:24:12 10 as long as we all understand where we are, that's our
09:24:14 11 point is, let's understand what the invention is. The
09:24:17 12 invention is reacting to form, create or grow so you have
09:24:21 13 different thicknesses so that you don't need a mask.
09:24:23 14 That's what this paragraph says. We need to find a way to
09:24:27 15 limit that and all be on the same page.

09:24:29 16 THE COURT: Okay. Just to make sure, it's your
09:24:35 17 position that the proposed construction from ST would
09:24:39 18 include that limitation that it would not --

09:24:42 19 MR. CICCARELLI: Tacitly so, your Honor, yes.

09:24:45 20 THE COURT: Okay.

09:24:47 21 MR. CICCARELLI: Yes, tacitly so.

09:24:48 22 THE COURT: I just wanted to make sure it wasn't
09:24:50 23 somewhere else in the claim we would have to look for
09:24:52 24 that.

09:24:52 25 MR. CICCARELLI: Understood. This would be right

09:24:54 1 -- if the Court was inclined to include that language,
09:24:56 2 this would be the perfect place to put it or be one good
09:24:59 3 place to put it.

09:25:00 4 THE COURT: Okay. All right. Thank you, Mr.
09:25:01 5 Cicccarelli.

09:25:02 6 And who will be responding for Purdue?

09:25:36 7 MR. OFFOR: Good morning, your Honor.

09:25:37 8 THE COURT: Good morning, Mr. Offor.

09:25:39 9 MR. OFFOR: I think clearly the dispute here is
09:25:43 10 whether the claimed invention, which is not a process,
09:25:46 11 whether you should read a process limitation into the
09:25:49 12 claimed invention. And our construction, plaintiff's
09:25:56 13 construction is consistent with the claim language while
09:26:02 14 defendant's construction is trying to read in a process
09:26:06 15 limitation. They are trying to read in a limitation that
09:26:09 16 requires you to understand how the -- how the oxide layer
09:26:16 17 was formed in order to determine infringement, and that is
09:26:21 18 an improper way to read the claims.

09:26:24 19 And first and foremost, if you could advance to
09:26:27 20 the next slide. In the briefing, it's clear that both
09:26:33 21 parties understand the meaning of the claim language
09:26:37 22 that's at issue here. This is a quote from ST's own
09:26:41 23 briefing. Here, the disputed terms, "a second, thicker
09:26:46 24 oxide layer" that's out of claim 1 and "a gate oxide
09:26:49 25 layer" out of claim 6 refer to the layer of oxide that is

1 located over the tops and the sides of the gates. That's
2 simple, that comes -- that is right from the claim --
3 that's basically from the claim language and as the
4 purpose of claim construction is so that the jury can
5 understand what the claim language means, this is the
6 proper construction -- this is the proper construction.

7 If we turn to the specification, the
8 specification also supports plaintiff's construction,
9 here, as you can see, referring to the figures 3 and 4, we
10 have the language the polysilicon -- the poly crystalline
11 silicon gate that is surrounded along its top, bottom,
12 left and right sides by an insulating layer of silicon
13 dioxide. Again, the specification is clear, the claim
14 language is clear. Next slide.

15 Now, you heard -- at least what I heard was a
16 long presentation about a method claim, about a method of
17 how -- of what was disclosed in the patent about a process
18 to create this final product. And ST has told the Court
19 that they're not importing a process limitation, but
20 again, formed, created or grown by reacting the gate,
21 these are -- this is process language. This changes a
22 clear claim, clear claim language about a structure that's
23 claimed and forces you to look at how the structure was
24 formed, and that's not what's claimed.

25 The next slide. And again, this is just a

09:28:49 1 depiction of the claim so we know what we're talking about
09:28:52 2 here. A second thicker oxide layer over said top surface
09:28:57 3 and side wall of said first gate. It's in claim 1.
09:29:02 4 Similar language in claim 6, a gate oxide layer, thicker
09:29:06 5 than said substrate surface oxidation layer, and over said
09:29:14 6 tops and sides of each of said gates. Again, this doesn't
09:29:17 7 require a reinterpretation of the claims and it does not
09:29:21 8 require reading in process limitations to describe how
09:29:27 9 these layers were formed.

09:29:31 10 Again, next slide, the specification repeatedly
09:29:36 11 refers to MOSFET devices. So the idea that the invention
09:29:42 12 is only the process of creating the devices is incorrect.
09:29:50 13 And in fact, next slide, during prosecution, Purdue
09:29:56 14 specifically elected an apparatus claim, and again, that's
09:30:01 15 what's before the Court here. It's not a process claim.

09:30:09 16 Next slide, there's more support in the
09:30:14 17 specification that makes clear, yes, the invention can be
09:30:16 18 made in a variety of ways. But the bigger thing to focus
09:30:21 19 on here is that the claim language, the claims that we are
09:30:24 20 talking about are apparatus claims, they are not process
09:30:27 21 claims.

09:30:51 22 So again, we believe that our construction, it's
09:30:53 23 consistent with the claim language. Could you advance two
09:30:57 24 sides, please. Plaintiff's construction is consistent
09:31:05 25 with the claim language. Plaintiff's construction does

09:31:09 1 not read in process limitations. And we believe that
09:31:15 2 plaintiff's construction should be adopted for those
09:31:17 3 reasons.

09:31:20 4 THE COURT: Okay. Is that all, Mr. Offor?

09:31:26 5 MR. OFFOR: That's all we have.

09:31:27 6 THE COURT: Okay. Mr. Ciccarelli, would you like
09:31:29 7 to respond?

09:31:30 8 MR. CICCARELLI: I would, your Honor.

09:31:40 9 Regarding your Honor's question about the file
09:31:41 10 history, I'm not sure the full extent that's there, but at
09:31:46 11 ECF 74, Exhibit E has the portions of the file history.
09:31:52 12 So I think that may be there, so that's one place to look.

09:31:56 13 The main argument I heard is, we can't read in
09:32:00 14 this limitation about that the patent places on the
09:32:05 15 invention because it somehow related to a process and this
09:32:08 16 is a product claim. That doesn't matter, your Honor.
09:32:12 17 When the applicant defines his invention to be something,
09:32:16 18 you can't ignore that, even if it's a process step. And
09:32:20 19 there's other cases where that's been done and we've cited
09:32:22 20 them in our brief.

09:32:24 21 ECF 74, page 3, we cite to Andersen Corp vs.
09:32:30 22 Fiber Composites. And then, there's also Southwall Tech
09:32:35 23 vs. Cardinal where the Court held that a claim to a
09:32:39 24 dielectric layer -- this is, again, dielectric layer is
09:32:43 25 part of semiconductor layer -- was limited to a dielectric

09:32:47 1 layer prepared by a one-step process because the patentee
09:32:49 2 excluded those formed by a two-step process. So I think
09:32:53 3 that is sort of neither here nor there whether it is --
09:32:57 4 whether we're using a process step.

09:32:59 5 We also presented the position that a oxide
09:33:03 6 formed is not really a process step; it's describing the
09:33:08 7 nature of that oxide layer. But regardless, we think it
09:33:12 8 doesn't matter. If you have to, limit the claim by
09:33:16 9 putting in a process limitation to limit it to what the
09:33:20 10 inventor said it is, you absolutely can do it and you
09:33:22 11 should do it. And all we're doing here is, we're looking
09:33:28 12 at the paragraph that we talked about earlier where we
09:33:32 13 think it's very clear that the inventor defined the outer
09:33:38 14 edges of where the invention lies. And Purdue wants it to
09:33:43 15 go beyond that and I think this is a perfect place to
09:33:45 16 limit the claims to what the patent says the invention is.
09:33:50 17 Unless the Court has additional questions, I think that's
09:33:52 18 all I have.

09:33:53 19 THE COURT: Okay. Thank you, Mr. Ciccarelli.

09:33:56 20 Mr. Offor, I would like you to address the
09:34:00 21 section that's on the screen. Try and see where --
09:34:09 22 especially beginning where it describes the "so long as"
09:34:12 23 and goes into specific description of how the invention
09:34:16 24 has to be created. How is that not a disclaimer or a
09:34:22 25 limitation to be imported into the claim?

09:34:32 1 MR. SHORE: Can I take that, your Honor?

09:34:34 2 THE COURT: Yes, sir. That's fine.

09:34:37 3 MR. SHORE: So when this patent was prosecuted,
09:34:39 4 it does have in it ways to make devices as well as the
09:34:44 5 device that results. And when the patent office came in
09:34:47 6 and said, what do you want, do you want apparatus claims
09:34:49 7 or do you want process claims, they chose the apparatus
09:34:52 8 claims. And so, how those apparatus are made is
09:34:56 9 completely irrelevant. There is no disclaimer. There's
09:34:59 10 no clear and unequivocal disclaimer.

09:35:01 11 And as a matter of fact, if you pull up -- it
09:35:09 12 literally has in it and this is -- I believe this would be
09:35:23 13 slide 13. They actually go into and they quote the Baliga
09:35:30 14 textbook where they say several different types of
09:35:33 15 vertical power MOSFETs have been proposed including the
09:35:36 16 double-diffused MOSFET, D-MOSFET, and trench gate or
09:35:39 17 U-MOSFET. These and other power MOSFETs are described in
09:35:41 18 a textbook by Baliga, which is incorporated herein and by
09:35:44 19 reference. So the Baliga textbook literally is
09:35:49 20 incorporated -- any MOSFET made using any of those
09:35:51 21 processes, any of those types of MOSFETs that includes
09:35:54 22 this structure are meant to be covered.

09:35:58 23 So that language that they pointed to in there,
09:36:00 24 it's not a clear and unequivocal disclaimer. It is not
09:36:04 25 saying -- as a matter of fact, if they wanted to disclaim

1 it, the language that they're asking to be put in could
2 very easily have been put in.

3 So when a jury is looking at this claim in court
4 and they see, okay, the layer is thicker here, it's
5 thinner here, that's easy. You look at the reverse-
6 engineering, is it thicker or is it thinner. But when
7 they come in and said, oh, wait a minute, how did it get
8 thicker, how did it get made, that's a process patent.
9 That is not an apparatus patent. That will be confusing
10 to the jury. It will be incorrect and there is no clear
11 and unequivocal disclaimer.

12 In fact, I don't even think they claim in their
13 briefing that there was a disclaimer. Now, this would be
14 the first time I think that they've said that it was
15 disclaimed -- that anything else was disclaimed. So I
16 don't recall anywhere that they've even said that there
17 was some sort of a disclaimer of scope. So that would be
18 a new one.

19 The other part of this that I think should sort
20 of be self-evident is, they literally in their own
21 briefing, which we pointed out, they admit that the
22 thickness -- the differences in thickness are the
23 invention. And then, they said, well, wait a minute, we
24 don't like that. And so, as a purely to try to escape
25 infringement, they're trying to build in process

09:37:31 1 limitations, and it doesn't say a process. The preamble
09:37:35 2 doesn't say a process, it says a MOSFET. It doesn't say a
09:37:38 3 process for making MOSFET. It doesn't say a MOSFET made
09:37:41 4 by a particular process. It doesn't say any of those
09:37:44 5 things.

09:37:44 6 So to come in and create a disclaimer where
09:37:50 7 clearly none exists, and to change a perfectly clear and
09:37:54 8 concise, well-written claim, thicker here, thinner here,
09:37:59 9 you can look at it and you can see it, very simple for a
09:38:01 10 jury to understand and try to say okay, well, now we've
09:38:03 11 gotta get into how it's made and what the process is and
09:38:07 12 other things, that's -- it would be confusing and, worst
09:38:11 13 of all, it'd be incorrect.

09:38:13 14 THE COURT: Okay. Thank you.

09:38:16 15 Any response, Mr. Ciccarelli?

09:38:18 16 MR. CICCARELLI: Depends if the Court wants to
09:38:20 17 hear a response or not.

09:38:23 18 THE COURT: I'm happy to hear if there's
09:38:25 19 something you want to add.

09:38:30 20 MR. CICCARELLI: What Purdue is advocating is
09:38:32 21 that all you're left with in this structure is the
09:38:36 22 thickness of this oxide layer after the product is fully
09:38:41 23 fabricated. And keep in mind, so you have the oxide that
09:38:44 24 is above the gate and then, you have the oxide that's
09:38:46 25 below the gate. And the claim language says the oxide

09:38:53 1 above the gate is thicker than the oxide below the gate.

09:38:56 2 So make sure that there's no confusion, that's -- the

09:38:58 3 oxide below the gate is not the oxide that we're talking

09:39:01 4 about earlier over the source. That a different oxide.

09:39:03 5 So in construing this oxide layer above the gate,

09:39:09 6 Purdue wants to remove any limitation from that other than

09:39:11 7 it's an oxide. When they do that, they -- it could be a

09:39:15 8 deposited oxide having uniform thickness that uses a mask,

09:39:19 9 which totally flies in the face of what this patent

09:39:22 10 clearly says is the invention. Thank you.

09:39:24 11 THE COURT: Thank you. Dr. Yi, could I see you.

09:44:08 12 Okay. Let's go back on the record. All right.

09:44:13 13 So after considering the briefing and the arguments of

09:44:15 14 counsel, and of course, we'll issue an opinion to follow,

09:44:19 15 but the Court's going to maintain its preliminary

09:44:22 16 construction. Yeah. The "so long as" language in column

09:44:28 17 7 is close; but then, it's not clear entirely in my

09:44:35 18 opinion in light of the election between the method and

09:44:40 19 apparatus claims that the applicant had to undertake,

09:44:42 20 because obviously the specification is directed at both

09:44:46 21 method and apparatus claims, and what we're now discussing

09:44:50 22 is the elected apparatus claim. So we're going to stay

09:44:52 23 with the Court's preliminary construction on that and not

09:44:57 24 incorporate the process elements into the claim language.

09:45:03 25 Okay. So the next claim, I believe this would go

09:45:07 1 back to ST, as well.

09:45:11 2 MR. CICCARELLI: Actually, on this one, we won
09:45:13 3 this one at the preliminary --

09:45:15 4 THE COURT: Oh, this is the preamble one. Okay.
09:45:16 5 Well, there we go. Let's go to the preamble argument and
09:45:19 6 I believe, Mr. Offor, will you be handling that?

09:45:40 7 MR. OFFOR: Your Honor, for the 633 patent, the
09:45:44 8 improvement in the 633 patent is the narrowed JFET region
09:45:48 9 and segmented base contacts. And you can see that
09:45:53 10 described in the first and second columns of the patent.
09:45:59 11 In fact, so the segmented base contacts are shown at
09:46:04 12 column 2, line 16 through 28, where we see further
09:46:10 13 comprise a plurality of base contact regions formed in
09:46:13 14 each of the first and second source regions. The base
09:46:16 15 regions being smaller than the first and the second source
09:46:18 16 regions. Next slide.

09:46:20 17 And our argument here on the preamble and we
09:46:22 18 appreciate your Honor's construction, but we believe that
09:46:25 19 the term "double implanted" in the preamble cannot be
09:46:30 20 limiting. And basic question here is, what structure does
09:46:34 21 the term "double implanted" supply? It doesn't supply a
09:46:41 22 gate. It doesn't supply the gate insulator structure.
09:46:44 23 And I think as you've seen from -- you'll see from ST's
09:46:48 24 arguments, it's really the MOSFET aspect that supplies any
09:46:52 25 structure that may be missing from the claim. Next slide.

09:46:57 1 And we've just taken this cutout from ST's
09:47:01 2 slides, and you'll see, they indicate that the preamble
09:47:05 3 needs to be limiting because there's no gate, there's no
09:47:09 4 gate insulator, there's no drain recited in the actual
09:47:13 5 claim language but the -- a MOSFET includes all of those
09:47:19 6 structures. Whether or not it's double implanted is not
09:47:25 7 relevant to there being a gate, a gate insulator, and a
09:47:30 8 drain. And so, again, our position is that double
09:47:33 9 implanted should not be limiting. Next slide.

09:47:39 10 So as I said, a MOSFET includes a gate, gate
09:47:42 11 insulator, source, drain in a substrate, and as you've
09:47:47 12 seen on the previous slide, ST basically admits that.
09:47:51 13 We've included here just a definition. This is a fairly
09:47:55 14 standard understanding of what the MOSFET means. And as
09:47:58 15 you can see, this includes structurally, a gate, source,
09:48:03 16 drain, and this gate insulator. Next slide.

09:48:11 17 And the gate is separated from the semiconductor
09:48:14 18 body below by the gate insulator. Next slide. And that
09:48:18 19 the gate electrode, the gate itself, it can be a
09:48:22 20 polysilicon gate. It doesn't have to be metal. The prior
09:48:26 21 art that was cited against this patent, against the 633
09:48:31 22 patent makes that clear. And the examiner referring to
09:48:36 23 the Kumar reference indicated this MOSFET operates
09:48:40 24 normally off accumulation mode so that when no voltage is
09:48:45 25 applied to the polysilicon gate electrode. And you'll see

09:48:46 1 that throughout and I don't think that ST is here
09:48:49 2 contending that MOSFET needs to be limited to a gate
09:48:53 3 that's only metal.

09:48:57 4 The gate electrode -- again, the gate electrode
09:48:59 5 can be polysilicon, it can be metal. Can you slip two
09:49:06 6 slides. And the gate insulator is usually an oxide, but
09:49:09 7 it doesn't have to be an oxide. In the prior art of
09:49:15 8 record confirms that a MOSFET and an IGFET are synonymous,
09:49:21 9 and basically that's an insulated-gate field effect
09:49:27 10 transistor. These terms are effectively synonymous. If
09:49:34 11 the term "MOSFET" is limiting, it should be construed as a
09:49:38 12 POSITA would understand it, and that is as a field effect
09:49:44 13 transistor, the gate doesn't need to be metal. The gate
09:49:48 14 insulator doesn't need to be an oxide with all the
09:49:50 15 components of a MOSFET. Could you advance another slide.

09:49:54 16 And so, again, while we are definitely -- we
09:49:57 17 appreciate the Court's construction, our position is that
09:50:04 18 double implanted doesn't supply any structural limitation.
09:50:08 19 And since double implanted appears in the preamble, the
09:50:11 20 presumption that it's not a limitation, and the only
09:50:14 21 reason to include it as a limitation is if it provides a
09:50:20 22 structural component. And I have not seen anything in the
09:50:23 23 briefing throughout anywhere in the briefing where ST has
09:50:27 24 even suggested that there's a structural limitation that
09:50:31 25 is brought about by the double implanted language.

09:50:35 1 And so, with that, could we go to the next slide.
09:50:45 2 Without identifying what structural limitation this double
09:50:50 3 implanted language imparts, it can't be read into the
09:50:52 4 claims since it's found in the preamble.

09:51:12 5 THE COURT: Oh, sorry. I thought you had more.
09:51:14 6 I was waiting.

09:51:16 7 MR. OFFOR: If you had any questions for me.

09:51:18 8 THE COURT: Yeah. So as I'll follow it then, the
09:51:21 9 plaintiff's argument essentially boils down to whether the
09:51:25 10 double -- or the issue, I guess, from the plaintiff's
09:51:28 11 perspective is whether the double implanted is a
09:51:30 12 limitation but no issue with regard to whether MOSFET is a
09:51:32 13 limitation.

09:51:35 14 MR. OFFOR: Yeah. We believe it's accurate that
09:51:38 15 MOSFET provides structure that's not explicitly recited in
09:51:41 16 the claim, but again, the double implanted does not and
09:51:44 17 so, it should not be read in.

09:51:45 18 THE COURT: And if it were read in, does
09:51:50 19 plaintiff have a suggested definition for double
09:51:55 20 implanted?

09:51:56 21 MR. OFFOR: We do not have a suggested definition
09:51:58 22 right this second, but we can convene and I can provide
09:52:02 23 one if that's -- if you need one.

09:52:04 24 THE COURT: Okay. I think it might be helpful.
09:52:06 25 I'm not saying which way we'll go just yet. But that

09:52:10 1 might be helpful. So.

09:52:10 2 MR. OFFOR: Okay.

09:52:12 3 MR. SHORE: Your Honor, if I could add one quick
09:52:14 4 thing.

09:52:15 5 THE COURT: Yes, Mr. Shore.

09:52:16 6 MR. SHORE: The title of the patent obviously is
09:52:18 7 not something that the inventor comes up with. The title
09:52:21 8 of the patent is something the patent office comes up
09:52:23 9 with. And this title, the double implanted is an artifact
09:52:25 10 of the fact that there were both process claims that could
09:52:29 11 have been elected and apparatus claim that could have been
09:52:32 12 elected. If a process claim had been elected, the double
09:52:35 13 implanting might have some relevance, but it doesn't in
09:52:38 14 the process claim. MOSFET supplies all of the structure
09:52:42 15 that ST claims is missing. And if MOSFET alone provides
09:52:47 16 all the structure that ST claims is missing, then that's
09:52:50 17 all that needs to be imported from the preamble. But
09:52:54 18 that's why I believe that language was there. That's
09:52:57 19 language chosen by the title of the patent. This language
09:53:03 20 was chosen by the patent office, but the double implanting
09:53:06 21 is an artifact of the fact that we were at one time both
09:53:09 22 prosecuting process and apparatus claims before the
09:53:12 23 election.

09:53:13 24 THE COURT: Okay. And I understand it just to
09:53:14 25 make clear, though, we're not talking about importing a

09:53:18 1 limitation from the title of the patent. We're talking
09:53:19 2 about the preamble of claim 9, which was the
09:53:24 3 lexicographer's work, right?

09:53:24 4 MR. SHORE: Absolutely. And again, I think the
09:53:26 5 main thing to point out is that you import limitations
09:53:30 6 from the preamble only as necessary to provide a complete
09:53:34 7 invention.

09:53:34 8 THE COURT: Understood. Understand.

09:53:37 9 MR. SHORE: MOSFET provides the complete
09:53:39 10 invention. Every single thing that ST says is missing is
09:53:43 11 provided by including MOSFET.

09:53:44 12 THE COURT: Okay. Could, yeah, y'all convene and
09:53:50 13 let me know if we did limit it -- or import that
09:53:53 14 limitation or say that that portion of the preamble was
09:53:56 15 limiting what plaintiff's proposed, you know, definition
09:54:01 16 might be.

09:54:02 17 Could I hear from Mr. Ciccarelli on this issue?

09:54:05 18 MR. CICCARELLI: Your Honor, I'm hearing three
09:54:34 19 different arguments by plaintiff. The first is, shouldn't
09:54:37 20 be limiting at all. The second is, if it is limiting,
09:54:41 21 only a portion of it should be limiting. And then,
09:54:44 22 finally, they want actual constructions for the MOSFET,
09:54:49 23 for example. And now, your Honor is suggesting maybe a
09:54:52 24 construction for double implanted.

09:54:54 25 So I want to address their third point first.

09:54:58 1 This court has a procedure for claim construction and
09:55:00 2 there's a reason for it. We exchange claim terms, we then
09:55:04 3 exchange constructions, we then exchange extrinsic
09:55:09 4 evidence, we then do briefing, we then meet and confer,
09:55:11 5 and the goal and idea there is, let's make this a well-
09:55:15 6 thought-out process where we get to hopefully the correct
09:55:18 7 answer.

09:55:19 8 What we hear is last night, Mr. Shore raising his
09:55:21 9 hand and saying, oh, but wait a minute, let's go ahead and
09:55:24 10 construe these other terms while we're at it. Never
09:55:26 11 before indicated, he never indicated that he wanted to
09:55:29 12 construe those terms months ago when we went through this
09:55:31 13 process. And now, he wants to do this process overnight
09:55:36 14 and this morning on the fly? We don't think that's right.
09:55:38 15 We object to it. We don't think it's proper. We think
09:55:40 16 it's going to get us to the wrong result and it's
09:55:42 17 prejudicial to ST to do that.

09:55:50 18 Now, in terms of the rest of the arguments, I
09:55:51 19 want to address something Mr. Shore said and I don't think
09:55:53 20 Mr. Shore is a patent prosecutor. I did some patent
09:55:56 21 prosecution almost 30 years ago. And the way it worked
09:55:59 22 back then, and I think it's the same now, the applicant
09:56:02 23 actually provides a title and then, the patent office
09:56:05 24 tweaks it as necessary and makes suggestions. So I don't
09:56:08 25 know where he was getting that from, but maybe he does

09:56:11 1 prosecution somewhere else.

09:56:12 2 THE COURT: I will say that that I consider the
09:56:16 3 title irrelevant for this argument since we're talking
09:56:19 4 about the preamble of the specific claim.

09:56:21 5 MR. CICCARELLI: I do, too, your Honor. Thank
09:56:23 6 you.

09:56:23 7 So the other point I needed to make is in terms
09:56:25 8 of their second argument, which is, if it is limiting,
09:56:28 9 let's just make it partially limiting. Let's start
09:56:30 10 parsing it. I've never seen a case, they have not cited a
09:56:33 11 case where the Court actually takes a preamble and starts
09:56:36 12 parsing it up into yeah, this is needed, this is not
09:56:39 13 needed. We don't think that's proper.

09:56:41 14 It's a binary decision: It either is limiting or
09:56:44 15 it's not. And they seem to acknowledge that you need the
09:56:48 16 MOSFET. They have acknowledged that. And so, now the
09:56:52 17 question is, if that is limiting, the whole preamble comes
09:56:55 18 in. And in terms of these terms, they seem to be arguing
09:56:59 19 with respect to MOSFET, as well, it's a term of art.
09:57:02 20 People in the industry know exactly what it is. If that's
09:57:05 21 the case, why are we construing it? They're not saying it
09:57:08 22 takes on a different meaning than its ordinary meaning.
09:57:11 23 So there is absolutely no reason to construe it. If, for
09:57:13 24 some reason, down the road, the experts do have a
09:57:16 25 disagreement as to what the plain and ordinary meaning is,

09:57:19 1 there will be an opportunity, as Judge Albright often
09:57:22 2 gives us, to address that through a mini Markman.

09:57:26 3 But right now, based on a raising of the hand the
09:57:29 4 day before, trying to submit extrinsic evidence that we
09:57:32 5 have never seen before without us having an opportunity to
09:57:35 6 go gather our own extrinsic evidence, that is -- that
09:57:38 7 makes no sense in my mind, your Honor.

09:57:42 8 In terms of the structure, now getting back to
09:57:44 9 the is it limiting or not, right, I want to show where the
09:57:50 10 double implanting fits in in terms of structure. And if
09:57:54 11 you look at our slide, I want to explain what the double
09:57:58 12 planting does. I want to try to zoom in a little bit.

09:58:11 13 Okay.

09:58:12 14 The way these structures are made is through
09:58:16 15 implantation, right? You start with the wafer, which is
09:58:19 16 your substrate, and then, you start making these -- like
09:58:22 17 these blue regions, the P well that's shown on the
09:58:25 18 drawing. The way you make that P well is, you implant,
09:58:29 19 you implant dopants to create that P well. So originally
09:58:33 20 the material is a red color, it's an N type. You take
09:58:37 21 some P-type dopants, you implant them in so that you
09:58:40 22 basically pollute that area with these ions, with this
09:58:45 23 P-type ions, and that creates that structure. So
09:58:47 24 implantation is very much that. So that's one
09:58:50 25 implantation.

09:58:50 1 The other implantation then creates your N plus
09:58:54 2 source. That's the N plus region right here. You create
09:59:00 3 -- you do another implant to create that region, which is
09:59:03 4 N type within the P type. So and what that does, your
09:59:07 5 Honor, is it creates this channel right here, little area
09:59:12 6 that I'm showing. I don't know if you can see the cursor
09:59:14 7 on the screen.

09:59:14 8 THE COURT: I can, yeah.

09:59:16 9 MR. CICCARELLI: So that's called the channel and
09:59:17 10 with these two implantations, you have created this
09:59:20 11 channel. So now you have the N region, you have the P
09:59:23 12 region, and then, you have the N plus region. When you
09:59:26 13 apply a little voltage to the gate, it creates an electric
09:59:33 14 field which changes the nature of this channel and turns
09:59:35 15 it more into a red-type material and let's see current
09:59:38 16 flow down to the bottom of the device. That's how you
09:59:41 17 turn on a MOSFET on and off. You apply a voltage to the
09:59:44 18 gate, it creates an electric field, which turns this
09:59:47 19 little channel area and opens it up for the current to
09:59:51 20 flow. And that's what the double implanted means. You do
09:59:55 21 these two implants to create these wells and to create the
09:59:58 22 channel.

09:59:59 23 So the double implantation very much tells you
10:00:01 24 about the structure. And recall, there are generic
10:00:04 25 MOSFETs, there are double-implanted MOSFETs, there are

10:00:07 1 vertical double-implanted MOSFETs, there's all different
10:00:11 2 types. And that's where the double implantation comes in
10:00:14 3 in terms of structure. So we think it very much does
10:00:17 4 breathe life into the claims because the claim elements
10:00:19 5 themselves only identify two, and from there, you can take
10:00:22 6 all different directions and create different devices.
10:00:24 7 But even they agree, this patent is limited to MOSFETs.
10:00:27 8 And specifically in this claim, the preamble says double
10:00:30 9 implanted. I think that's all I needed to address unless
10:00:38 10 your Honor has any questions.

10:00:40 11 THE COURT: I don't have any questions, Mr.
10:00:42 12 Cicccarelli.

10:00:42 13 MR. CICCARELLI: Thank you.

10:00:42 14 THE COURT: And, Mr. Shore, before you begin,
10:00:45 15 I'll tell you, I'm kind of inclined to do as Mr.
10:00:47 16 Cicccarelli suggested and stay with the preliminary
10:00:51 17 construction that it's a limitation. And if there's a
10:00:53 18 further dispute, we can have a supplemental briefing and
10:00:57 19 argument on that, if it even winds up being a dispute.

10:01:02 20 MR. SHORE: Just quickly, we just finished our --
10:01:06 21 I say just finished. A few months ago, we finished a
10:01:09 22 trial with Judge Albright, and in the middle of the trial,
10:01:13 23 we had to do a claims construction on a term.

10:01:16 24 THE COURT: Yeah.

10:01:17 25 MR. SHORE: So what we're trying to do here is,

1 we're getting ready to start discovery. And as we start
2 discovery, we need to know what the -- this preamble
3 limits, if anything. And the two points I'd like to make
4 in response to him is, one, if STMicro cannot articulate
5 what a MOSFET is here today, we have a really serious
6 problem because MOSFET is what they do. They sell
7 MOSFETs, they advertise MOSFETs, they call these things
8 MOSFETs. And for them to say that they can't come in when
9 they're the ones who asked -- they asked that the preamble
10 be limiting and I'm sure they had some idea when they
11 asked the Court to have the preamble be limiting as to
12 what those limits were.

13 We didn't ask the Court to limit it. So we
14 didn't think it should be, but it's done, you've limited,
15 it, so that's fine. But for them to say that we want it
16 to be limited but we don't want to tell Purdue how it's
17 limited, we want to start discovery not knowing how it's
18 limited when the term is MOSFET.

19 And the other interesting thing that he got up
20 and he showed the figure and he didn't dispute this.
21 MOSFET when -- when they said in their brief that they
22 wanted the preamble construed, they said because without
23 it, you don't have a source, a drain and a gate, or the
24 layer. Well, we just showed how MOSFET provides all of
25 that structure. Every single thing that they claimed was

10:02:39 1 missing is provided by MOSFET. Double implanting is a
10:02:44 2 process. He also now just told you that, well, double
10:02:48 3 implanted means this thing, but vertical double implanted
10:02:53 4 means another.

10:02:54 5 This is a comprising claim. So if you have two
10:02:59 6 implants, you're double implanted. If you have more than
10:03:02 7 two, you're still double implanted. If you have 15
10:03:05 8 implants, you're still double implanted because it's a
10:03:07 9 comprising claim. You may -- if you want to construe
10:03:12 10 something, it would be two -- the two implanted regions.
10:03:16 11 But the two implanted regions are already disclosed in the
10:03:20 12 body of the claim, and he admitted that. He just showed
10:03:23 13 you that the two implanted regions are these source
10:03:25 14 regions and base regions. He just showed them to you.

10:03:28 15 They're in the body of the claim. Those two, you
10:03:31 16 know -- it's a comprising claim but those two are in body
10:03:34 17 of the claim. So the only thing that we need to do and
10:03:37 18 it's simple, it's not catching ST off guard. They make
10:03:43 19 MOSFETs. They call these products MOSFETs. They are a
10:03:45 20 MOSFET company. It's not surprising that a MOSFET
10:03:48 21 includes a source, a gate, and a drain, and an insulating
10:03:53 22 layer. That's all that's required. They know that. And
10:03:56 23 so, we would ask that the Court to construe it so that we
10:03:59 24 can do discovery. So that we can do our discovery
10:04:03 25 understanding if there is going to be a limitation, we

10:04:05 1 understand what it is.

10:04:07 2 THE COURT: Well, and I think at this point --
10:04:11 3 actually, let me confer with Dr. Yi.

10:05:55 4 We can go back on the record. Okay. For this
10:05:58 5 one, we will similar to the previous one, we'll maintain
10:06:03 6 the Court's prior construction that the preamble is
10:06:06 7 limiting and at least at this stage, just give it its
10:06:14 8 plain and ordinary meaning. I will admit that even as a
10:06:17 9 mechanical engineer, MOSFET seems like in this area to be
10:06:22 10 a term, if any term has a plain and ordinary meaning, it
10:06:25 11 would be that one.

10:06:28 12 So we're going to stay with the preamble as the
10:06:30 13 limitation. If it becomes an issue in discovery, Mr.
10:06:32 14 Shore, or at the expert report stage, which I think you've
10:06:37 15 sort of foreshadowed for us, we'll bring it back and we'll
10:06:41 16 address it at that time.

10:06:43 17 And then, I believe we're just down to the last
10:06:46 18 term, which is "less than three micrometers." And would
10:06:51 19 ST like to start with that, Mr. Ciccarelli?

10:06:54 20 MR. CICCARELLI: Certainly, your Honor, thank
10:06:55 21 you.

10:07:09 22 So as our briefing indicates, we think this term
10:07:12 23 is indefinite. To be clear, we're not saying that every
10:07:15 24 time the word "about" is used is indefinite. That's not
10:07:19 25 the case. That's not the case law. The Federal Circuit

10:07:21 1 has told us otherwise and we understand that. There are
10:07:24 2 situations where you can use the word "about" as long as
10:07:27 3 you know what you're trying to achieve, as long as you
10:07:31 4 know the objective, experts can opine on how much latitude
10:07:34 5 the word "about" gives you.

10:07:36 6 I have an example. A few weeks ago, I called my
10:07:39 7 son who lives up in Denton, and I asked him, how wide is
10:07:43 8 your couch? He said about three feet. Okay. How do I
10:07:48 9 decide how close to three feet that couch really is,
10:07:52 10 right? If the whole purpose of it was for me to go up
10:07:55 11 there to go hunting the next morning, for me to crash on
10:07:58 12 his couch, about three feet, it could be three and a half,
10:08:01 13 it could be two and a half, could even be two feet. I
10:08:04 14 think me and my dogs could sleep on the couch.

10:08:08 15 You get a lot of leeway on the word "about" in
10:08:11 16 that circumstance. On the other hand, if the reason I was
10:08:13 17 asking was because he's moving back home and we're trying
10:08:16 18 to figure out if we can fit the couch into the spare
10:08:18 19 bedroom where the doorway's 37 inches wide, all of a
10:08:22 20 sudden, I can't give the word "about" that much leeway,
10:08:25 21 right? In that situation, you need to know with more
10:08:29 22 precision how close to three feet it is. Plus or minus a
10:08:32 23 foot won't cut it when you're trying to fit it through the
10:08:34 24 door. Plus or minus six inches won't. Plus or minus one
10:08:38 25 may not. I may have to get down to the quarter inch.

10:08:41 1 Once I know whether I'm crashing on his couch or
10:08:43 2 trying to fit it into the room, I then have something on
10:08:46 3 which to base the amount of -- to determine the amount of
10:08:50 4 leeway that the word "about" gets. The problem with this
10:08:52 5 patent is that that's what the patent doesn't tell you.
10:08:55 6 It doesn't tell you what you're trying to achieve, and
10:08:58 7 therefore, I have no way of knowing of placing boundaries
10:09:01 8 on the "about" word. So that's what I'd like to discuss.

10:09:04 9 THE COURT: Okay.

10:09:05 10 MR. CICCARELLI: So I'd like to start with the
10:09:09 11 Cohesive Tech case, which is a really good case in terms
10:09:11 12 of how do you construe what "about" means, how much leeway
10:09:15 13 do you get? And so, it says, look, the word "about" does
10:09:17 14 not have a universal meaning in patent claims. Okay. Its
10:09:21 15 meaning depends on the technological facts of a particular
10:09:24 16 case. That's simple enough. Its range must be
10:09:27 17 interpreted in its technologic and stylistic context in
10:09:30 18 determining how far beyond the claimed range the term
10:09:33 19 "about" extends the claim, we must focus on the
10:09:37 20 criticality of the numerical limitation to the invention.

10:09:40 21 So this criticality, right, how critical is it?
10:09:44 22 We have to have something that tells us how critical the
10:09:49 23 measurement is so that we can decide the amount of leeway
10:09:51 24 on the word "about." So the interesting thing about this
10:09:54 25 patent is, the JFET width is not the only parameter that

1 it talks about changing. It talks about a variety. It
2 talks about you can have different breakdown voltages,
3 different on-resistances, different substrate materials,
4 different thicknesses, and doping concentrations of
5 various different layers, the maximum electric field in
6 the gate oxide, the JFET doping, and then, also, the JFET
7 width. So there's a lot of things that you can tweak that
8 the patent says you can tweak all these things and, as the
9 patent says, they may affect each other.

10 So if you go higher on one, you may push the
11 other one in a bad direction. So how do I strike this
12 balance? That's where the patent is silent. It does not
13 tell us what balance we're trying to strike, or what we're
14 trying to optimize, what we're trying to build. Are we
15 trying to make something that is the lowest possible on
16 resistance so it gives us the longest battery life? Or is
17 it something that has the highest reliability? And we
18 might get that by keeping the electric field around the
19 gate oxide lower. It doesn't tell us what the ultimate
20 goal is and that's the problem. That's why the "about" in
21 this case is not definite enough.

22 So what I wanted to do was go through the patent
23 and show the Court what it says about this JFET width
24 being three microns or less. Does it tell us why? What
25 is the reason for going below three? So let's look at

1 that. First column 1, line 65 through 67, says the JFET
2 region may have a width less than about three micrometers.
3 For example, it may have a width of one. Okay. Does it
4 tell us why, what we're trying to achieve? Absolutely
5 not.

6 It doesn't even tell us it has to be below three.
7 It says it may have a width less than three. That means
8 it may have it greater than three. It may be four, five
9 six, we don't know. It doesn't tell us, you want to be
10 less than three because this lets you do that. Totally
11 not there.

12 The next example, column 2, lines 47 through 49,
13 the JFET region may also have a width less than about
14 three micrometers. For example, about one. Again,
15 nothing about why it needs to be less than three. So we
16 have nothing that tells us how critical it is because we
17 don't know what we're trying to achieve.

18 Column 3, lines 25 through 26, the JFET region
19 may have a width of about one micrometer. Again, doesn't
20 tell us why. Column 6, lines 21 through 27, in some
21 embodiments, a JFET region 30 has a short width relative
22 to the typical D MOSFET. Then it goes on, in some
23 embodiments -- that meaning in some, right? In some, it
24 may not. In some embodiments, the JFET region is about
25 three micrometers or less. In one embodiment, about one.

1 Again, doesn't tell us what we're trying to achieve by
2 that. Are we fitting the couch through the door or are we
3 just sleeping on the couch? I need to have something to
4 draw boundaries around the extent and flexibility of the
5 word "about."

6 So this is all that I could find in the patent
7 about why it needs to be less than three and it doesn't
8 tell us why. It gives us no basis to evaluate
9 criticality. In fact, it says -- it doesn't even have to
10 be less than three, it can be more. That's because all
11 the other parameters could be different. So if you leave
12 the JFET wider, you can play with the other parameters.
13 That's why this is a problem. It's all permissive
14 language. We have no way of setting boundaries.

15 And this is an example, your Honor, from one of
16 the papers that Dr. Bhat, their expert, cites in his
17 declaration. It's the paperwork by Ryu and Agarwal. In
18 that paper, Ryu and Agarwal were talking about a specific
19 device that they made that had a breakdown voltage of
20 2,000 volts. It also had thicknesses that -- dopant
21 concentration levels, a bunch of other things that were
22 defined. And what this chart is is, at the bottom, the
23 axis is the width of the JFET. So on the right is six
24 microns, five, four, three is circled, two and one. So
25 that's the width of the JFET. And the red line gives you

10:13:57 1 the on-resistance that they measured or that they
10:14:00 2 simulated, I think it was, if I remember correctly. So
10:14:03 3 they say at five microns, okay, here's your resistance.
10:14:06 4 At four, goes down a little bit but not much. At three,
10:14:09 5 it goes down, but then, below three, it shoots up, right?

10:14:15 6 Now, on the other hand, the paper by Saha and
10:14:18 7 Cooper, which came after the invention, by the way, so
10:14:21 8 it's a few years later, so we have to be careful how we
10:14:24 9 use that, and we have some issue in terms of how Purdue is
10:14:28 10 using it. But what it's showing is something a little bit
10:14:30 11 different, right, because it was based on a device that
10:14:33 12 only supported a thousand volts, had different layer
10:14:36 13 thicknesses, different doping concentrations. So all
10:14:38 14 those other parameters that we talked about that the
10:14:40 15 patent says could change, they made a different choice
10:14:44 16 than Ryu and Agarwal. And now, let's look at what their
10:14:47 17 resistance measurements show.

10:14:49 18 Six, five, four, three, two, the on-resistance
10:14:53 19 doesn't -- it decreases a little but not that much. But,
10:14:56 20 then, once you get to one micron and below, it starts
10:14:59 21 shooting up. So what does this tell us? This tells us
10:15:03 22 that the value of the JFET width depends completely on all
10:15:07 23 these other parameters that you select. And unless you
10:15:12 24 know what you're trying to achieve, is it the lowest
10:15:15 25 on-resistance? Is it a rugged device that is very

10:15:18 1 reliable? Is it a device that has the highest possible
10:15:21 2 voltage rating? You don't know how much leeway to give
10:15:24 3 the word "about."

10:15:28 4 And again, the patent, you'll recall, says it may
10:15:31 5 have a width of less than three, right? So, for example,
10:15:35 6 you look at their paper, at the Saha Cooper paper, and
10:15:38 7 here's three. You could go lower on the JFET, given their
10:15:43 8 selection of layer thicknesses and concentrations, you
10:15:47 9 could go less than three. The patent says may. May have
10:15:51 10 a width of less. Yeah, it may have a width of less, but
10:15:54 11 then, you make different choices and, all of a sudden,
10:15:57 12 what happens? You can't even go, you shouldn't go less
10:15:59 13 than three. You don't want to go less than three because
10:16:01 14 you're going to bring on-resistance through the roof
10:16:04 15 unless your objective is something different.

10:16:06 16 Is your objective low resistance or is it a
10:16:09 17 rugged device? That's what we don't know. And in what we
10:16:11 18 showed as I read the patent -- and I urge the Court and
10:16:14 19 technical advisor to go back and read the patent for any
10:16:17 20 inkling of what we're optimizing, it's not there. It's
10:16:20 21 all may: You may do this, you may do this, you may do
10:16:23 22 that, all over the place.

10:16:24 23 Now, what does Purdue do in light of that because
10:16:28 24 we called them out on it in our briefing. So they come
10:16:30 25 back in the sur-reply and the first quote is from their

10:16:33 1 brief. The bottom quote is from infamous Dr. Bhat's
10:16:36 2 sur-reply declaration that we never had a chance to
10:16:38 3 respond, okay? But they both say the specification
10:16:42 4 clearly states that the JFET width is optimized according
10:16:47 5 to two objectives: Decreasing on-resistance and reducing
10:16:50 6 the electric field. And they cite to the specification.
10:16:54 7 So what do I do? I go look at the specification.
10:16:56 8 I don't remember reading that, but maybe I missed
10:16:58 9 something. So I look at it. Says nothing to that effect.
10:17:02 10 All it says is, in some embodiments, the JFET region is
10:17:06 11 also fabricated to have short widths relative to a typical
10:17:10 12 D-MOSFET device which may reduce the specific on-
10:17:13 13 resistance of the semiconductor device. For example, in
10:17:15 14 some embodiments, the JFET region has a width that is
10:17:18 15 about three microns. That's the language we saw earlier,
10:17:21 16 it doesn't say that we're optimizing for on-resistance.
10:17:24 17 It says if you select the JFET and make it narrower, you
10:17:28 18 may reduce on-resistance, right? It doesn't say that we
10:17:33 19 are driving towards a low on-resistance situation.
10:17:37 20 The next paragraph that they cite to, I now have
10:17:40 21 on the screen, conversely, the shorter width of the JFET
10:17:44 22 may tend to increase the blocking voltage. Well, that may
10:17:47 23 be a good thing, but it doesn't tell you it's a good
10:17:50 24 thing. It's just may do that. It may increase the
10:17:52 25 blocking voltage. Because such a configuration may reduce

10:17:55 1 the magnetic field. Again, it doesn't say it does,
10:17:57 2 doesn't say it need to, it doesn't say that you're trying
10:17:59 3 to strive for either a high voltage or a low electric
10:18:04 4 field, magnetic field.

10:18:06 5 So again, these paragraphs do not tell us, the
10:18:09 6 patent nowhere tells us what we're optimizing for. It's
10:18:13 7 the patent very much talks about you have a bunch of
10:18:15 8 parameters, you can adjust them all to get a good outcome.
10:18:19 9 Yes, great, but that doesn't help us to decide how much
10:18:23 10 leeway the word "about" gets because we don't know what
10:18:26 11 we're driving towards. We don't know if we're putting the
10:18:28 12 couch through the door or if I'm just sleeping on it.

10:18:30 13 Again, the last case, Nautilus, your Honor's well
10:18:33 14 aware of it, Supreme Court case. You have to know the
10:18:36 15 boundaries within reasonable certainty. I have found
10:18:39 16 nothing that allows us to give us that certainty and
10:18:42 17 that's why we think it's indefinite.

10:18:46 18 THE COURT: Let me ask you, would the minimum
10:18:53 19 feature size for the other features of the MOSFET, would
10:18:56 20 that set or help a person of skill in the art understand
10:18:58 21 the upper limit?

10:19:00 22 MR. CICCARELLI: So you're three steps ahead of
10:19:01 23 us, your Honor. And I was going to let them argue it and
10:19:03 24 then, respond. So let me address it. I'm glad you raised
10:19:05 25 it. I think this relates to, again, the Bhat declaration

10:19:09 1 where in his original declaration, he talked about this
10:19:13 2 ten -- plus or minus ten percent. No support. Nothing.
10:19:16 3 Just pulled it out of thin air.

10:19:19 4 Everybody knows, ah, JFET width, plus or minus
10:19:22 5 ten percent. Okay. We called them out on it. He comes
10:19:24 6 back in his supplemental declaration and says, oh, here's
10:19:27 7 the paper that talks about that. But when you read the
10:19:31 8 paper and when he then -- even his declaration admits the
10:19:34 9 plus or minus ten percent has nothing to do with the JFET
10:19:38 10 width. It has to do with the patterning of the
10:19:41 11 polysilicon gates.

10:19:42 12 Very different processes. Remember the
10:19:44 13 patterning, you use a mask, right? That's above the
10:19:49 14 substrate. The JFET is formed inside the substrate.
10:19:51 15 That's when you're implanting, you're diffusing, that's
10:19:55 16 the type of tolerances that matter there. So what he's
10:19:59 17 talking about in terms of plus or minus ten percent is
10:20:02 18 very different. And to kind of come full circle back to
10:20:05 19 your question, does the line width type, does the
10:20:09 20 technology sort of help you?

10:20:11 21 I don't think it does because we don't -- so it
10:20:15 22 would help us in terms of manufacturing tolerances, but
10:20:19 23 I'm not really worried about that because any expert can
10:20:21 24 talk about manufacturing tolerances based on whatever
10:20:25 25 technology we're using for the products, right? To your

10:20:28 1 point, if your error is so much, then there may be that
10:20:31 2 may fit into the leeway that "about" gets. But there's
10:20:35 3 one other more important limit -- aspect to this word
10:20:39 4 "about." We don't know what we're driving towards, right?
10:20:43 5 So could it be four? Forget the manufacturing tolerances.
10:20:47 6 Could the JFET be four? Could it be five? We don't know.
10:20:50 7 We have no idea.

10:20:51 8 There's two things. There's the manufacturing
10:20:53 9 tolerance and then, there is the design, you know, why
10:20:55 10 you're making it that particular width. There's nothing
10:20:58 11 in the patent that tells you why you're making it that
10:21:00 12 width; and therefore, you don't know how much leeway to
10:21:02 13 give it based on the objectives of the patent.

10:21:04 14 I don't know if that answers your question or
10:21:07 15 not.

10:21:07 16 THE COURT: I think so.

10:21:09 17 MR. CICCARELLI: Maybe not. I guess I was done.
10:21:16 18 So I was just answering your question. If there's anymore
10:21:18 19 then.

10:21:18 20 THE COURT: I don't have any others at this
10:21:20 21 point.

10:21:20 22 MR. CICCARELLI: Thank you.

10:21:30 23 THE COURT: Go ahead, Mr. Shore.

10:21:31 24 MR. SHORE: This is Mr. Shore for the court
10:21:33 25 reporter.

1 The practice of patent law has taught me many
2 things. One of the things patent law -- practicing patent
3 law has taught me is when brilliant lawyers and engineers
4 want to be confused, want to be befuddled because it suits
5 their nature, it suits their purpose to say a patent's
6 indefinite, suddenly, their IQs drop by 75 percent. They
7 don't understand anything, they can't read anything.

8 Why is the JFET -- why is it at about three?
9 It's at about three because once you get down to about
10 three, that is where you start getting the benefits. And
11 the benefits are to protect the dielectric layer from
12 breakdown. And so, by shrinking that JFET to about three
13 micrometers, that's where you start seeing the benefits.

14 Now, if you have someone who comes in and wants a
15 specially made part and they say, I don't care about
16 on-resistance. All I care about is, you know, blocking
17 voltage or something else, yes, you know, you can get a
18 custom-made part to adjust it down to one. You can get a
19 custom-made part to adjust it to 2.5 or whatever. But
20 anything less than three or about three, no one thinks
21 four is three. You know, this is a question for the
22 experts. You know, no one thinks four is three. That's a
23 33 percent increase over three. That's not about three.

24 We also know and I'm sure you know as an
25 engineer, these things have manufacturing tolerances. So

10:23:09 1 if you're going to say three, it needs to be about three,
10:23:13 2 anyway, because under manufacturing tolerances of your
10:23:16 3 tools and things, it's never going to be exactly three.
10:23:19 4 So if you put three or less and it comes out at 3.2, or
10:23:24 5 3.015, or whatever, then they say, oh, we don't infringe
10:23:27 6 because our manufacturing tolerances bring it out at a
10:23:30 7 different size.

10:23:31 8 So this term is used throughout patent law. It's
10:23:35 9 not -- we're not moving a couch. I don't sleep on couches
10:23:41 10 apparently as much as Mr. Ciccarelli does, but if I'm
10:23:44 11 sleeping on a couch, that's not the same thing as creating
10:23:48 12 a highly complex semiconductor device with features that
10:23:51 13 are less than the size of the human hair. So "about" is
10:23:55 14 not vague, it's not indefinite. Engineers clearly
10:24:00 15 understand what it means.

10:24:01 16 It means that you start seeing the positive
10:24:04 17 effects of decreasing the JFET region at about three, and
10:24:09 18 those effects, depending on how you want to characterize
10:24:12 19 it, can decrease all way down to one, which is what's in
10:24:16 20 the paper, basically what's in the patent and the
10:24:18 21 specification. It's basically all the way down to one to
10:24:20 22 about three is where you'll see the benefits of the
10:24:22 23 invention.

10:24:23 24 Once you get significantly beyond three or not
10:24:26 25 about three, then you lose the benefits of the invention.

10:24:34 1 So this is -- it is not unusual, it is not strange, it is
10:24:39 2 not unclear. They know exactly what this means. This is
10:24:44 3 feigned ignorance, feigned befuddlement, and the Court
10:24:48 4 should recognize it for what it is.

10:24:51 5 THE COURT: Mr. Ciccarelli, would you like to
10:24:53 6 respond?

10:24:54 7 MR. CICCARELLI: I don't know if I have enough IQ
10:24:56 8 left.

10:24:58 9 THE COURT: Well, I started as a mechanical
10:25:00 10 engineer, so I'm way out of this league.

10:25:03 11 MR. CICCARELLI: And I don't know if having gone
10:25:04 12 to U.T. makes it more challenging for me now that I'm
10:25:07 13 here.

10:25:08 14 In any event, I heard Mr. Shore say about three
10:25:13 15 is where you see the benefit of the invention. That's a
10:25:17 16 great statement, but I didn't see him point to anything in
10:25:19 17 the patent that says that. That the JFET is providing any
10:25:24 18 specific benefit that you're striving for. It's not
10:25:27 19 there; otherwise, he would have shown it to you. And I'm
10:25:30 20 sure he'll come back up in a minute and show you all the
10:25:32 21 places in the patent where it shows that. It just
10:25:34 22 doesn't. That's the problem.

10:25:35 23 What the patent says is, you can play with the
10:25:37 24 size of the JFET. You can play with the doping of the
10:25:40 25 JFET. You can play with the doping of the current

10:25:44 1 spreading layer. You can play with a lot of different
10:25:46 2 things to get whatever results you want. What we need to
10:25:49 3 know since this is a limitation in a claim is, what is
10:25:53 4 this JFET width doing for us? Why are we making it low,
10:25:59 5 smaller? What benefit is it giving to us? That's what
10:26:01 6 the patent doesn't tell us and that's why we have no way
10:26:04 7 of deciding how much leeway to give the word "about."

10:26:07 8 Separate and apart from manufacturing tolerances,
10:26:11 9 which experts can talk about, but there's a bigger problem
10:26:12 10 here, which is, we have no idea what we're trying to
10:26:15 11 strive toward.

10:26:16 12 THE COURT: Thank you, Mr. Ciccarelli.

10:26:20 13 MR. SHORE: The only other thing I'd point out.

10:26:22 14 THE COURT: All right. Wait till you get to the
10:26:24 15 microphone, Mr. Shore, so Ms. Reznik can hear you.

10:26:28 16 MR. SHORE: For the court reporter, this is
10:26:30 17 Michael Shore.

10:26:31 18 The column 6 talks about where the benefits of
10:26:32 19 the width and the decrease of the width come about, column
10:26:36 20 6 and column 7, and a little bit, actually, in column 5.
10:26:38 21 The other point is, I mean, this is a clear and convincing
10:26:42 22 evidence standard, and we had this in our last trial. And
10:26:46 23 one of the things that I always enjoyed doing is pointing
10:26:49 24 out in pattern jury charge, this is something that they
10:26:52 25 would have to prove that it's indefinite and prove it to

1 you where you would come to that conclusion without
2 hesitation. That's a high standard.

3 This is not indefinite, the words "about,"
4 "approximately" are used in patent law all the time. In
5 the context of this particular patent, it's clear that
6 that is the range at which the benefits of the invention
7 were shown to exist. And the only reason why they put
8 "about" is, if they had put three or less and someone had
9 designed it to be three and it came out at 3.015, or 3.2,
10 or whatever, then they'd be jumping up and down saying
11 they don't infringe because they're more than three.

12 And by the way, also in our brief, on page 6, we
13 have the statement and it's cited contrary to ST's
14 assertions, the specification clearly states that the JFET
15 width is optimized according to two objectives, decreasing
16 on-resistance and reducing the electric field in the oxide
17 above the JFET region. That's the purpose, the POSITA
18 would understand the objectives and would adjust the width
19 accordingly.

20 And again, if they want to come out and say make
21 a four -- a three-and-a-half or four-micron-wide JFET and
22 say it doesn't infringe, okay, it doesn't infringe. But
23 if it's within the range, you know, of about three
24 micrometers or less, it infringes, and that's something
25 for an expert to opine on whether or not it is about three

10:28:21 1 and what that range is, it is certainly not indefinite.

10:28:27 2 MR. CICCARELLI: Your Honor, could I address
10:28:29 3 those two things?

10:28:29 4 THE COURT: Certainly.

10:28:30 5 MR. CICCARELLI: We appreciate your patience. We
10:28:32 6 understand that's a great benefit of practicing or having
10:28:35 7 hearings before you.

10:28:35 8 THE COURT: That's right.

10:28:37 9 MR. CICCARELLI: Thank you for -- and trials, as
10:28:38 10 well, right?

10:28:38 11 THE COURT: Spread the word, you get lots of time
10:28:40 12 with a magistrate.

10:28:42 13 MR. CICCARELLI: You would give us lots of time
10:28:43 14 at trial, as well.

10:28:46 15 THE COURT: That's right. Might even get two
10:28:48 16 weeks.

10:28:50 17 MR. CICCARELLI: Okay. So I'm sharing, one
10:28:52 18 second. So Mr. Shore, I challenged him to find where in
10:28:58 19 the patent, he didn't show us, didn't really read from it.
10:29:01 20 He says in column 6. So I had some of column 6 already on
10:29:06 21 my slide. It's on the screen now where it talks about the
10:29:13 22 fact that in some embodiments, it may have some benefits.
10:29:17 23 Yes. In some embodiments, you could go less than three
10:29:20 24 and it may reduce the specific on-resistance. It may do
10:29:24 25 it. It doesn't say it actually does it. Doesn't say that

10:29:27 1 that's what we're striving for, right?

10:29:29 2 And then, he goes back and he cites to their
10:29:32 3 brief where they in their brief say the patent says you
10:29:35 4 optimize for two things. That's exactly what I pointed to
10:29:41 5 earlier. I had it up on the screen. This is the portion
10:29:43 6 of the brief that he's talking about in their sur-reply at
10:29:47 7 page 6. The patent clearly states that there's two
10:29:49 8 objectives, and they cite to the two paragraphs that we
10:29:52 9 discussed earlier. It does not say -- the patent doesn't
10:29:55 10 say that the objective is to optimize anything.

10:29:58 11 And in fact, your Honor, you can't even optimize
10:30:01 12 those two things because they're in -- they fight against
10:30:03 13 each other. So -- but again, the patent doesn't say that
10:30:07 14 that's what we're striving for and that's the problem that
10:30:11 15 we have. The patent much less says -- it doesn't even say
10:30:14 16 that you have to be less than three. What it doesn't tell
10:30:17 17 us is, why are we below three? Where does that take us?
10:30:21 18 Doesn't provide it. Thank you.

10:30:23 19 THE COURT: Okay. Thank you. Let's go off the
10:30:25 20 record just briefly.

10:31:44 21 Okay. I appreciate the arguments, but we're
10:31:47 22 going to stay with the preliminary construction that it's
10:31:50 23 not indefinite and just apply the plain and ordinary
10:31:54 24 meaning to it, and we'll get an order out in that regard.
10:32:00 25 I think at this point, I'm not going to -- just for the

10:32:02 1 parties' sake, will not strike any declarations or
10:32:06 2 affidavits, but we'll give them whatever weight, if any,
10:32:10 3 the Court thinks is appropriate.

10:32:14 4 And also want to commend both parties, one, it's
10:32:16 5 great to see everybody in person and, two, the judicious
10:32:22 6 nature with which you've picked claim terms to argue
10:32:25 7 because these were -- you didn't argue every conceivable
10:32:28 8 term obviously. You picked ones that mattered and really
10:32:32 9 focused in on it. I really appreciate that, and I know
10:32:35 10 that that requires a fair amount of restraint by attorneys
10:32:38 11 at times. So that was very helpful and it also meant that
10:32:42 12 the Court gave every one of the arguments a lot of thought
10:32:46 13 and consideration. And when I say Court, obviously I'm
10:32:52 14 including with that the great benefit Dr. Yi's provided to
10:32:54 15 this area.

10:32:56 16 And so, with that, I'll start with plaintiff.
10:32:58 17 Does the plaintiff have anything else that we need to take
10:33:00 18 up today?

10:33:02 19 MR. SHORE: No, your Honor. We appreciate the
10:33:03 20 Court's indulgence and time in having a live hearing.
10:33:07 21 It's wonderful to be here. And on your comment about too
10:33:10 22 many claim terms, I'm not going to be here next week for
10:33:12 23 the next one you're doing for us, but when you're doing 20
10:33:15 24 terms, it's not us.

10:33:16 25 THE COURT: Okay. I'll remember that.

10:33:19 1 Anything from defendant, Mr. Ciccarelli?

10:33:21 2 MR. CICCARELLI: Nothing from us, your Honor.

10:33:22 3 Thank you.

10:33:22 4 THE COURT: Thank you very much. Thank you all
10:33:24 5 for coming and we'll be adjourned.

6 (Proceedings concluded.)

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UNITED STATES DISTRICT COURT)

WESTERN DISTRICT OF TEXAS)

I, LILY I. REZNIK, Certified Realtime Reporter,
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*LILY I. REZNIK, CRR, RMR  
Official Court Reporter  
United States District Court  
Austin Division  
501 West 5th Street,  
Suite 4153  
Austin, Texas 78701  
(512) 391-8792  
SOT Certification No. 4481  
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